COSMIC

Monthly Report

JANUARY 1994

THE UNIVERSITY OF GEORGIA

COMPUTER SOFTWARE MANAGEMENT

AND

INFORMATION CENTER

MONTHLY PROGRESS REPORT

JANUARY, 1994

UNDER CONTRACT

NASW-4670

PREPARED FOR

TECHNOLOGY UTILIZATION OFFICE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

WASHINGTON, D.C.

TABLE OF CONTENTS

1. GENERAL INFORMATION

In late December 1993, COSMIC catalog information was placed on Gopher and Worldwide Web (MOSAIC). In January, there were 2154 sessions from 487 unique machines on Worldwide Web and 5630 sessions from 1718 unique machines on Gopher. These computers that accessed this information are located all around the world. This exposure should greatly increase the awareness of COSMIC programs both domestically and internationally.

2. INVENTORY

The current inventory of programs available from COSMIC is the sum of the Class
1 and 2 programs in TABLE 1, "Issuability Status Summary." The total number of
items submitted from each source since COSMIC began is given in the right hand
column of TABLE 1. Numbers listed under the "Withdrawn" column reflect those
packages for which return or discard authorization has been provided by the
appropriate Technology Utilization Office.

TABLE 1. ISSUABILITY STATUS SUMMARY

July 1966 to Date

Center Mnemonic	Class 1	Class 2	Class 3	Class 4	In Process	Withdrawn	Total
ARC	74	5	5	3	7	86	180
COS	-	28	2	2	2	87	121
DOD	-	14	4	0	2	84	104
ERL	4	0	0	0	0	16	20
FRC	1	0	2	0	0	12	15
GSC	87	1	73	12	13	285	471
HQN	19	3	8	1	3	90	124
KSC	7	1	29	2	1	81	121
LAR	167	7	44	18	17	263	516
LEW	113	9	100	20	21	203	466
MFS	48	6	85	8	15	1,267	1,429
MSC	88	14	23	26	10	1,036	1,197
NPO	112	2	28	34	14	411	601
NUC	0	1	2	0	0	72	75
SSC	4	0	1	0	0	0	5
UGA	-	4	2	0	0	13	19
TOTALS	724	95	408	126	105	4,006	5,464

The number of submittals for the current month is above the average of the past few months. The total number of receipts for this month is seventeen: fourteen are initial packages and three are updates to packages. A summary by submittal site is shown in TABLE 2.

TABLE 2. SUMMARY OF TOTAL RECEIPTS 1994

Submittal Site	This Month	Calendar Year to Date
ARC	1	1
COS	1	1
DOD	2	2
ERL (SSC)	0	0
GSC	2	2
HQN	0	0
KSC	0	0
LAR	3	3
LEW	1	1
MFS	2	2
MSC	4	4
NPO	1	1
UGA	0	0
TOTAL	17	17

3. EVALUATION AND PUBLICATION

The program processing activities can be viewed as a three step process, although the steps are not necessarily done in sequence. These steps are program verification, program evaluation, and abstract preparation and publication.

Program verification represents the machine processing phase of evaluation and typically includes the compilation or assembly of supplied code using standard programming language translators followed by loading or linkage editing of the generated object code to insure completeness of the submitted code. This month COSMIC processed no programs through verification.

Program evaluation involves the review of programs and supporting documentation following the machine processing phase to determine their suitability for public release relative to the standards of completeness and content specified in the COSMIC Submittal Guidelines. Prices for distributed materials are also established during package evaluation. Factors considered in establishing the price charged for program code include the program source instruction counts as a gross measure of development effort, the machine independence or vintage, the quality of the supporting documentation, the known or assumed sales potential for the package, the functionality of the program relative to comparably classified packages, and the demonstrated level of developer programming support.

Two programs completed the evaluation activity for the current month. One was class 1, and one was class 3.

TABLE 3. SUMMARY EVALUATION TOTALS January, 1994 To Date

Submittal Site	Class 1	Class 2	Class 3	Class 4
ARC	0	0	1	0
COS	-	0	0	0
DOD	-	0	0	0
ERL	0	0	0	0
FRC	0	0	0	0
GSC	1	0	0	0
HQN	0	0	0	0
KSC	0	0	0	0
LAR	0	0	0	0
LEW	0	0	0	0
MFS	0	0	0	0
MSC	0	0	0	0
NPO	0	0	0	0
SSC	0	0	0	0
NUC	0	0	0	0
UGA	-	0	0	0
TOTALS	1	0	1	0

Publication activities carried out by COSMIC include the preparation of descriptive abstracts for all new submittal and updated Class 1 and 2 items evaluated each month as well as the preparation of Tech Briefs for the Class 1 packages for publication in the NASA Tech Brief Journal. No Tech Briefs were prepared this month.

4. MARKETING

The marketing activities performed by COSMIC involve: promotion of COSMIC and computer programs available from COSMIC in the technical press and trade journals; attendance at trade shows and professional society meetings to promote the services and software available from COSMIC; utilization of various media for the general promotion of COSMIC; utilization of benefits analysis reports to highlight COSMIC's technology transfer function; and preparation of abstract collections and program summaries.

COSMIC exhibited at the 32nd Aerospace Sciences Show in Reno, Nevada in January. The show is sponsored by the AIAA and COSMIC co-exhibited with NASA STI (code ST).

COSMIC attended the RIG Meeting at the Goddard Space Flight Center in January. Bad weather kept the attendance down but much was accomplished toward recognition by the IEEE.

The calendar of events follows.

Feb. 1-3, 1994   **Dual Use Technology Conference**

Meeting Contact: Chris Ortiz (Johnson Space Center)

COSMIC: Exhibit (John Gibson)

April 11-14, 1994   **National FLC Technology Transfer Conference,**

Kansas City, KS

Meeting Contact:

COSMIC: Attend

April 25-29, 1994   **NASTRAN Users' Colloquium**, San Diego, CA

Meeting Contact: Shirley Sanders

COSMIC: Host

June 27-29, 1994   **T^{2}S Annual Meeting**, Huntsville, AL

Meeting Contact: Dick Snow

COSMIC: Attend

Oct. 4-6, 1994   **UNIX Expo**, New York, NY

COSMIC: Exhibit

Nov. 8-10, 1994   **Technology 2004**, Washington, DC

COSMIC: Exhibit

5. CUSTOMER SERVICE

Customer Service provided by COSMIC, in addition to the distribution of program code and documentation, includes responding to requests for information. These requests may be in the form of telephone calls, letters, Tech Briefs cards, mini-brochure cards, trade show return cards, or magazine inquiry cards. Generally the requested information concerns the services provided by COSMIC, or information on specific programs or groups of programs which may be available from COSMIC. This month, a total of 2118 information requests were processed. This was divided into 2038 domestic requests and 80 international requests. Of the domestic requests, 966 were responses to Tech Briefs and 101 were responses to press releases and paid ads, and 325 free catalogs were sent to card deck announcements (paid) and trade show visitors. In addition to the above, E-Mail new program announcements were sent to E-Mail subscribers, and there were 590 sessions on the COSLINE information system, 2154 sessions from 487 unique machines on Worldwide Web, and 5630 sessions from 1718 machines on Gopher.

One other area of customer service is the response to requests for information relevant to problems associated with a particular program product installation. These requests are usually handled jointly with the Technical Service staff. After the customer problems have been resolved, a Problem Report Sheet is processed and added to the program package file for future reference. No problem reports were processed this month.

During the current month, a total of 159 customers representing 138 organizations received materials (program, documentation, or catalogs) from COSMIC. Customers

represent individuals, whereas, organizations represent corporations or institutions. These customers are located in 24 different states or territories. Both NASA and non-NASA disseminations are reflected in these statistics.

6. BENEFITS IDENTIFICATION

COSMIC follows an active campaign of interviewing previous customers in order to ascertain the utility of distributed programs and identify specific benefits accruing to users of these programs. Additionally, contact with customers is used to evaluate the services provided by COSMIC. When notable benefits are identified, they are documented in reports written by COSMIC staff which are then approved for public release by the customers. No benefits report was released for publication this month.

7. MAINTENANCE AND SUPPORT

JANUARY PROGRESS REPORT FOR NASTRAN MAINTENANCE

RPK's primary goal for January was to continue to work on SPRs and to begin implementation of an in-memory data base for all versions. Work was initiated on the in-memory data base. Several SPRs were closed. The following is an itemization of the work accomplished during the month of January:

1. Work was completed on correcting problems with the SCAN module when lamination is invoked with the CQUAD4 and CTRIA3 elements. These problems were documented as SPRs 93-010 and 93-011. Many problems were found with the SCAN feature during the analysis of these problems. Some of the problems found and corrected could be classified as new unreported SPRs. The changes also required updates to the User's Manual. These updates were made and will be transferred to the manual text files on the VAX for the software distribution of the next level.

2. Testing and validation of the in-memory data base was begun. The in-memory data base will allow for part of open core to be used for keeping non-executive GINO files in memory. Once space in the in-memory data base is exhausted, the data will automatically be written to disk. The implementation of this feature focused on the use of direct access FORTRAN I/O. This feature will standardize the FORTRAN I/O interfaces from GINO for all machines (except IBM) as follows:

    1. Open a file

    2. Close a file

3. Rewind a file

4. Write one block to a file

5. Read one block from a file

6. Position file to a specified block

7. Delete a file (free space)

8. Interface for substructure WRTBLK

9. Interface for substructure RDBLK

The in-memory data base will provide a directory of its contents when DIAG 2 (print of FIAT Table) is requested. All of the code being developed will be transportable to all of the COSMIC platforms with the exception of the IBM. (IBM must be separated because FORTRAN direct access on IBM is too inefficient to use. However, the IBM already has its own in-memory data base capability.)

3. Work on SPRs 93-004, 93-006 and 93-022 was not begun because the IBM at Kingston could not be accessed by telnet satisfactorily. The problem is trying to interface with an IBM 3270 terminal emulation to allow for full screen editing and use of the IBM's ISPF capability. This problem is being addressed with the help of COSMIC's Tim Peacock and personnel at IBM Kingston.

4. The following letters were sent to those users who have provided SPRs:

User	SPR No.	Date of letter	Status Reported
Ken Zagzebski	93-010 93-011	1-06-94	Documented Corrections

5. Received a letter from Scott Zilmer of Rockwell concerning coding errors involving mixing single and double precision. Scott also sent a copy of the nastplot

program modified by Rockwell for implementation on the SGI workstation. This information will be evaluated in February.

6. Support was given to NASTRAN users as follows:

    a. Provided information to twelve (12) potential lessees.

    b. Aided eight (8) lessees with problems that did not result in a SPR.

7. The following SPRs were closed:

    93-010, 93-011

The following tasks are defined for the month of February:

1. Continue to work on active SPRs.

2. Respond to users who call with problems.

3. Implement the in-memory data base on the Ultrix and HP platforms.

4. Establish working communications with IBM at Kingston.

5. Begin working on SPRs 93-004, 93-006, and 93-022.

6. Begin to write the following reports for the Colloquium:

    "New DMAP Alter Capability for 1994 Release"

    "Overview of the 1994 Releases"

7. Update the text files for the User's Manual for SPRs 93-010 and 93-011.

    If there are nay questions, please call.

TABLE 4 TOTAL DISSEMINATIONS

ITEM	Current Month VOLUME	VALUE	Dec. 1, 1991 To Date VOLUME	VALUE
A. ITEMS INVOICED				
1. Programs	76	28,190.00	1618	1,040,687.50
2. Documentation	81	5,228.00	2802	188,301.00
3. Leases (Initial)	8	11,075.00	486	481,574.00
4. Leases (Renewals)	10	38,400.00	194	727,800.01
5. Leases (Misc.)	0	0	0	0
6. Catalogs	26	650.00	1211	36,493.00
7. Miscellaneous	17	3,360.75	604	81,038.27
TOTAL INVOICE		$86,903.75		$2,555,893.78
B. NASA (No Charge)				
1. Programs	34	47,830.00	770	799,614.00
2. Documentation	33	2,167.00	886	47,356.00
3. Leases (Initial)	4	16,300.00	189	382,700.00
4. Leases (Renewals)	3	12,000.00	96	407,000.00
5. Leases (Misc.)	0	0	0	0
6. Catalogs	0	0	1088	27,665.00
7. Miscellaneous	0	0	20	2,670.00
TOTAL NASA		$78,297.00		$1,667,005.00
C. OTHER (No Charge)				
1. Programs	1	350.00	115	124,075.00
2. Documentation	0	0	49	2,592.00
3. Leases	0	0	12	46,000.00
4. Catalogs	0	0	100	2,540.00
5. Miscellaneous	0	0	4	400.00
TOTAL OTHER		$350.00		$175,607.00
GRAND TOTAL DISSEMINATION		$165,550.75		$4,398,505.78

TABLE 5 NASTRAN DISSEMINATIONS

ITEM	Current Month VOLUME	VALUE	Dec. 1, 1991 To Date VOLUME	VALUE
A. ITEMS INVOICED				
1. Licenses Initial	0	0	9	30,300.00
2. Licenses Renewals	8	36,000.00	140	444,975.01
3. Licenses (Misc.)	0	0	0	0
4. Documentation	0	0	125	6,590.00
5. Miscellaneous	1	400.00	9	5,472.24
TOTAL NASTRAN INVOICED		$36,400.00		$487,337.25
B. NASA (No Charge)				
1. Licenses Initial	0	0	9	42,500.00
2. Licenses Renewals	2	8,000.00	67	262,000.00
3. Licenses (Misc.)	0	0	0	0
4. Documentation	0	0	39	2,540.00
5. Miscellaneous	0	0	0	0
TOTAL NASA NASTRAN		$8,000.00		$307,040.00
GRAND TOTAL NASTRAN		$44,400.00		$794,377.25

TABLE 6 DOD DISSEMINATIONS

ITEM	Current Month VOLUME	VALUE	Dec. 1, 1991 To Date VOLUME	VALUE
A. ITEMS INVOICED				
1. Programs	1	2,000.00	10	15,300.00
2. Documentation	0	0	26	1,038.00
3. Leases	0	0	12	2,400.00
TOTAL DOD		$2,000.00		$18,738.00

TABLE 7 FOREIGN DISSEMINATIONS

ITEM	Current Month VOLUME	VALUE	Dec. 1, 1991 To Date VOLUME	VALUE
A. ITEMS INVOICED				
1. Programs	11	7,800.00	301	410,050.00
2. Documentation	9	1,114.00	453	59,339.00
3. Leases (Initial)	0	0	45	138,850.00
4. Leases (Renewals)	-1	-8,000.00	30	175,200.00
5. Leases (Misc.)	0	0	0	0
6. Catalogs	0	0	130	7,460.00
7. Miscellaneous	5	1,550.00	106	23,629.65
TOTAL FOREIGN		$2,464.00		$814,528.65

FINANCIAL STATUS

NASW 4670

JANUARY 1994

	CURRENT MONTH	CONTRACT TO DATE
Expense:		
Personnel	44,422.26	1,161,086.99
Staff Benefits	13,379.22	326,795.51
Travel	2,488.84	66,036.49
Equipment Purchases	0	27,613.95
Computer Time	202.56	9,959.19
Operating Expense	21,217.03	633,761.71
Program Maintenance	35,113.70	832,945.18
Overhead	19,410.81	538,964.11
Total Expense	136,234.42	3,597,163.13
Income:		
Sales Income	99,783.07	2,262,332.52
NASA Payments	31,208.33	1,530,457.66
Total Income	130,991.40	3,792,790.18

FINANCIAL STATUS:

	CURRENT MONTH	CONTRACT TO DATE
Income - Expense	(5,243.02)	195,627.05